



## Healthcare providers

# CentraState lays foundation for safer future

For a small community hospital, CentraState Healthcare System (CentraState) is faced with the same compliance issues and business imperatives as any larger healthcare system: patient safety and cost containment. Clinical supply chain and information system professionals joined together to develop processes for using GS1 standards to automatically and accurately identify products in its operating room (OR), while recording them in patient records required by the Centers for Medicare & Medicaid (CMS) and Office of National Coordinator (ONC). The ability to uniquely identify products used throughout the healthcare supply chain will not only enable CentraState to satisfy regulatory requirements, but also help the hospital increase patient safety, improve staff productivity, achieve precise and inclusive capture of costs, and continue to build community trust.

*By Kim Kelly, Beth Finan,  
Kevin Giles and Jane Girling*



## The burden of small, the advantage of independence

As an independent medical centre, CentraState combines the best of two worlds. It maintains a community hospital atmosphere, yet it offers the technology and professionalism typically found at larger healthcare systems. CentraState's independence gives it the agility to move forward swiftly, because it is without a vast hierarchy and the red tape that goes with it.

This is typified by the CentraState's current drive to embed supply chain efficiencies inside the hospital setting through the adoption of GS1 standards. Using barcodes and standards-based automation, CentraState aims to improve patient outcomes and safety, remain in compliance with various initiatives and regulations, and keep careful track of costs involved in providing superior patient care.

The best prescription for effectively tackling this project can be summed up in one word: collaboration.

CentraState's clinical administrator has joined with supply chain and technology colleagues to introduce efficiencies that will benefit all stakeholders—from patients to caregivers to employees. The team is leveraging the Global Trade Item Number® (GTIN®) that uniquely identifies each product supplied by medical device manufacturers. In fact, the GTIN is an essential component of the global supply chain, allowing for automated digital communication with the simple scan of a barcode.

“Without visibility and transparency, it's become more and more complicated to understand our cost for procedures—what's a winner and what's a loser,” says Beth Finan, Perioperative Business Administrator at CentraState. “Surgical supplies such as implants and tissues are driving particularly high costs, and we need intelligence and solid knowledge around these supplies.”



L to R: Beth Finan, Kim Kelly, Jane Girling, Nancy Miller, OR Billing Assistant, Kevin Giles and Lisa Floyd, Team Leader Surgical Services are members of the CentraState cross-functional team for implementing GS1 standards.

As the person responsible for OR management, Finan recognised the many manual processes being used were extremely labour-intensive for both supply chain and administrative support staff. The adoption of the GTIN as the central standard at CentraState provided the motivation to collaborate system-wide for better, more holistic solutions.

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## Three heads better than one

Kevin Giles, IS Management Team Leader for CentraState, came to the hospital just two years ago and immediately recognised that manual processes and data input was fraught with potential problems. “I knew multiple points of failure could arise within our system [with manual processes], so the IT department was on board right away to modernise and automate the system.”

“Reading GTINs embedded in barcodes [barcode scanning] obviously eliminates problems, improving accuracy tremendously,” Finan says. “And productivity will significantly improve because people won’t be spending time validating what was used, what was purchased or searching out invoices to match with supplies.”

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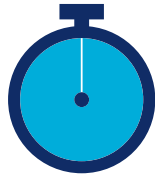
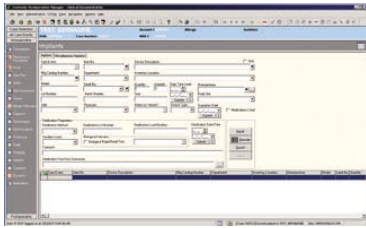
Jane Girling, Assistant Vice President for Corporate Materials Management, the department that handles supply logistics, supply chain contracting and purchasing for CentraState, had long supported the idea of barcode scanning, but knew it had to be based on a solid system of standards. As the liaison with the CFO, Girling and her team are instrumental in helping to facilitate a one-to-one relationship of item-to-charge. “Once GS1 standards were presented, I joined and provided our support to the effort,” Girling says.

As the largest internal client for the supply chain team, the OR was the phase one focus of CentraState’s efforts to match GTINs to actual OR products in inventory. Specifically, implantables were the focus because of their limited number and relative high cost. The catheterisation lab’s GTINs, with its finite number of consumable products—about 800—were created and mapped during phase two. The third phase will involve operating room consumables and phase four will be the orthopedic implants, non-sterile and non-single units, those with non-sterile packaging.

“Points of failure largely had been the way we were getting our GTIN information and what the vendor was providing to us,” Girling says. “In some cases, a manufacturer had not provided the same GTIN as the one on the actual package. Or they hadn’t implemented the UDI requirement appropriately or we had older inventory.”

“You don’t know what you don’t know,” Finan adds. “If somebody charged for the wrong item and it was an item in the master database, the likelihood is that we would never know.”

### Scanning for significant time savings in the OR



1. Click on "Search" button.
2. Type in value to search.
3. Click "Search Now" button.
4. Scroll through list of items that meet search criteria.
5. Select item from the list.
6. Enter Serial Number.
7. Enter Lot Number.
8. Enter Expiration Date.

**Average time to complete: 72 seconds.**



1. Scan barcode.
2. Enter patient-specific information.

**Average time to complete: 24 seconds.**

By scanning a product's GTIN encoded in the barcode, CentraState saves substantial time in its OR—approximately 67% or one minute per product—savings that adds up with approximately 7,000 operations a year.

To overcome some of the choke points, the team did a physical inventory to find identical matches and segregate problem items. CentraState's back office systems—the one for supply chain, the one for compliance with electronic medical records (EMR), the health information management system and the clinical system for patient care—would all need to access synchronised information based on the GTIN.

Fortunately, one of the systems allowed them to record multiple identifiers for a single item, and in the case of items without a GTIN, let what information they had to be input until a perfect match could be verified. The team called upon its vendors for tissue, pacemakers and surgical meshes, asking them to provide their GTINs for their low units of measure, populating the correct GTINs manually. (Working directly with some manufacturers is ongoing, as is educational efforts with the clinical staff, showing them what to look for.)

Today, when an OR nurse scans an item from the product categories completed that does not appear automatically in the system, she holds the packaging aside until the GTIN can be found. The IS team has written a script that updates any linked back office systems, in particular the master data system used by the hospital, so no information is lost. Interfaces are also now being developed to automate the input of UDI information into relevant systems.



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### Moving from process to practice

"This is an industry issue and it's not something that we can always work out directly with manufacturers. GTIN placement is inconsistent and causes confusion: where it is placed on a package, or if a single item comes in a box, inside of which is a peel pouch (that gets opened in an OR) that shows a different number," Finan says. "The independence given to manufacturers is challenging to us, the end-users. These are now coming to light as more of us get involved."

Despite the hurdles, CentraState now has nearly 80 percent of all phase one items loaded into its Clinical System, assuring that barcode scanning of implantables in the OR will match a product—and product charge—in inventory. The move from process to practice took only about six months. Remaining product identification issues may be worked out upstream as more vendors get up to speed on UDI adoption.

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## Scannable implantables

Hardware was analysed by Giles' team. Scanners utilised in operating room environments must be able to be properly sanitised by cleaning products and protocols already in use. In addition to the native programmes that can parse barcodes, the scanners needed to be programmable, since CentraState created nearly 50 rules for identifying different types of barcodes.

CentraState has been recognised for its efforts, nominated by the American Hospital for the *Most Wired Innovator* award and named one of four finalists for an innovator award by HealthTrust Group Purchasing.

The accolades helped underscore for the leadership team the project's return-on-investment, but the project team knew the time-savings element—the minutes when eyes are on the patient rather than processes—would be most persuasive. They produced a 60-second video that vividly demonstrates what the system improvements deliver to patients and to the hospital.

“I report to the Vice President of Clinical Services and her primary focus is always patient safety,” Finan says. “The fact that this process is impactful on patient safety gives us a lot of support from leadership.”

Knowing that the initiative would do double duty in complying with CMS and ONC requirements for “meaningful use” raised the level of support among the hospital administrators and Board. “This is a big deal and it enables us to pass the UDI information to our EHRs,” Girling says.

From a practical standpoint, having accurate costs captured for every item used, particularly in the OR where the most expensive products are expended, is important for any not-for-profit institution like CentraState. Accuracy is equally key to avoiding audits from multiple payer entities. And having accurate chargebacks on a patient's bill is vital in building trust, especially for a community hospital.

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**Kim Kelly**, Vice President of Clinical Services, CentraState Healthcare System

## Factors of success

“I attribute our success to the quality of people that we had on the project,” Giles says of the many who contributed to the project.

“Just knowing the benefit from the end result is very motivating. It's easy for the end-user to see that this is something that is going to be valuable to them, so they support us,” says Finan.

“This was a terrific demonstration of collaboration between the clinical staff, the systems administrator, materials management and the IT team,” says Kim Kelly, Vice President of Clinical Services. “The results improved work flow and much improved product tracking and charge capture. This effort clearly demonstrates the value in the multidisciplinary approach to project management. The team did outstanding work.”

“The work that GS1 Healthcare US is doing is great, because they have workgroups on the provider’s side and on the manufacturer’s side and they’re bringing us together,” Girling says. “It gives both groups an appreciation for what’s happening in the real world.”

The CentraState team agrees that a project like this takes time and patience. “I think anyone in the hospital sector understands that there is no small change in a hospital. The ramifications of downstream systems and affects are huge,” Giles says.

And collaboration between supply chains and clinical is absolutely essential. “CentraState demonstrates that a small system without a large supply chain and staff support can still have an enormous impact on outcomes. I think that our example can help guide some of the larger systems with greater resources,” Girling says.

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### About the Authors



**Kim Kelly**, is Vice President Clinical Services with responsibility for operational oversight and strategic planning and development for clinical service areas. She oversees two assistant vice presidents, nine directors and managers, and more than 400 employees in an

organization with a \$35 million dollar operating budget and \$7 million dollar capital budget. Accomplishments include the selection and implementation of a clinical documentation system for peri-operative service areas; implementation of a robotic surgery program; accreditation as a Bariatric Center of Excellence; expansion and relocation of Outpatient Infusion from 6 to 12 bays; and ACR accreditation and re-accreditation in ultrasound, CT Scan, Nuclear Medicine and Women's Imaging (BICOE).



**Beth Finan** is currently the Perioperative Business Manager at the CentraState Healthcare System responsible for overseeing ancillary, financial and IT functions within Perioperative Services departments. Additionally, she collaborates and takes a lead role on implementation

teams for project initiatives. Beth has an extensive background in Accounting and Information Systems practices. She has a strong aptitude for process redesign and efficiency analysis.



**Kevin Giles**, IS Management Team Leader, brings a different viewpoint to the healthcare IT space with more than 25 years of progressive IT experience, across several verticals. With vast knowledge of how other sectors use technology, he has made it a goal to see new and more

efficient IT processes brought to both CentraState's backend and clinical systems. Kevin oversees all of backend applications and systems at CentraState with several analysts and software developers reporting to him. He holds a BS in Computer Science from Rutgers University and an MS in Computer Science from Fairleigh Dickinson University, both in New Jersey, US.



**Jane Girling**, Assistant Vice President of Supply Chain Management, is a professional health care supply chain executive with over 40 years of progressive experience in the delivery of contemporary, best practice sourcing, procurement, and supply chain services. At CentraState, she

created and now directs all aspects of the enterprise-wide supply chain, including an acute care hospital, nursing home, assisted living facilities, retirement community, ambulatory centres and community practice sites. Jane is a Supply Chain Knowledge Leader and was selected as one of only 10 supply chain executives nationwide to serve on the Cardinal Health Customer Advisory Council. She is currently a member of the GS1 Healthcare Provider Advisory Council on implementation of the GS1 standard for UDI. Jane and her team were a finalist in both the American Hospital Association Most Wired Innovator Award 2017 and Health Trust GPO Innovator Award 2017.

### About CentraState

**CentraState Healthcare System** is a nonprofit community health organisation consisting of an acute-care hospital, an ambulatory campus, three senior living communities, a family medicine residency program, and a charitable foundation. CentraState's mission is to enhance the health and well-being of its community through the compassionate delivery of quality healthcare.

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